

PAPERS AND ORIGINALS

Very Early Termination of Pregnancy (Menstrual Extraction)

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Summary

Very early termination of pregnancy was performed on 424 women in three London teaching hospitals. Altogether 90% of the women were no more than 14 days overdue, and 67% of these had histological evidence of pregnancy. The procedure differed little in technique or its acceptability to the patient from termination done later in the first trimester. The similar incidence of complications suggested that it is not an alternative to conventional contraception. The response of patients, general practitioners, and referral agencies, however, indicated that there is a definite need in the community for a very early termination service.

Introduction

Termination of unwanted pregnancies at an early stage is potentially less traumatic for the patients both physically and psychologically than later termination. Studies in the Philippines, India, Singapore, and U.S.A.¹⁻⁴ have shown that vacuum aspiration of the uterine contents in women who are less than 14 days past the expected onset of a menstrual period is a safe and effective method of terminating suspected pregnancy. This form of early termination is widely known as menstrual regula-

tion, and less commonly as menstrual induction or extraction. It is called interception by those who see it as a preferable alternative to contraception.

A joint project involving St. Mary's Hospital, the Middlesex Hospital, and University College Hospital was set up in May 1973 to evaluate the method and its complications.

Patients and Methods

Details of the project were sent to general practitioners in the catchment areas of the three hospitals, student health centres, family planning organizations, private charitable pregnancy advisory groups, and organizations offering help and advice in the area. Referred patients were seen (by L.J.S.) at a central clinic separate from the hospitals.

From June 1973 to June 1974 633 women were referred. Altogether 209 patients were not accepted for study, mainly because the uterus was larger than the expected for dates or menstruation began before the procedure could be performed. All women whose period was overdue by up to 14 days were accepted into the study (regardless of whether a pregnancy test gave positive results). They were not included if they had just stopped taking oral contraceptives. Pregnancy was finally diagnosed on the histological findings of the aspirate.

All aspiration procedures were carried out by one operator (L.J.S.) during three operating sessions a week. Up to five patients were booked for each session. Patients were usually fit to leave hospital about half an hour after aspiration. They were then asked to take their temperature twice daily and were given a letter telling them what symptoms to expect in the following week together with details of the 24-hour medical cover which had been arranged. An A3 form of notification was completed for all women. One week after the procedure a vaginal examination was performed and an early morning specimen of urine (E.M.U.) was tested to exclude continuing pregnancy. The result was correlated with the histological findings to establish whether the aspiration had been successful. Patients were asked to rate the discomfort of the procedure on a scale from 0 to 4: 0=no pain, 1=slight pain, 2=moderate pain, 3=severe pain, 4=unacceptable pain. Anti D γ -globulin was given to all rhesus-negative women who were shown to be pregnant.

Contraceptives were prescribed one week after the procedure. Follow-up appointments were made at six and 12 weeks to discuss contraceptive problems and detect any physical or psychological complications of the procedure. Patients who did not or could not attend at 12 weeks were sent a questionnaire to complete and return.

A further 600-700 enquiries were received from women who could

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not be accommodated in the study. The age and marital status of the patients studied is shown in table I. Altogether 212 patients were nulliparous, 133 were parous, and the remaining 79 had had a previous abortion.

TABLE I—Distribution of Patients according to Age and Marital Status

Age (years):	15-19	-24	-29	-39	≥40	Total (%)
Married	1	8	31	50	8	98 (23)
Single	54	119	85	17	2	277 (65)
Widowed, separated, divorced		4	23	19	3	49 (12)
Total (%)	55 (13)	131 (31)	139 (33)	86 (20)	13 (3)	424 (100)

OPERATIVE TECHNIQUE

The operative technique was essentially the same as that described by Lewis *et al.*⁵ using the Karman cannula, except that cannulae 4-7 mm in diameter were used. A curette check was performed in the first few cases but found unnecessary as a routine. The aspiration time and the procedure time from insertion to removal of the speculum were noted. No analgesia or anaesthesia were used for the first 136 patients, but thereafter intracervical block using 12 ml of 1% lignocaine solution injected into the cervix at 12, 4, and 8 o'clock was used for 258 patients. The rest had local anaesthesia given by different routes.

Histological analysis was carried out in all cases (by M.A.) to establish the diagnosis of pregnancy. When there were "hypersecretory glands and decidua" in the absence of trophoblasts or villi "suggestive evidence of pregnancy" was diagnosed and the possibility of continuing intrauterine or ectopic pregnancy had to be excluded. The Pregnosticon Dri-Dot pregnancy test (supplied by the International Fertility Research Programme, Chapel Hill, North Carolina, U.S.A.) was performed on E.M.U. specimens on the day of the procedure and one week later.

Results

The number of days menses were delayed was calculated by subtracting the average of the longest and shortest menstrual cycle from the number of days since the start of the last menstrual cycle. Altogether 90% of patients were less than 15 days overdue.

Table II shows the results of the pregnancy test on the E.M.U. obtained just before the procedure together with the histological findings at the first aspiration. The pregnancy test had a reliability rate of 96.6% (196 out of 203 patients positive on the pregnancy test were histologically positive) and a false-negative rate of 28%. Of the 14 patients who had equivocal results on pregnancy testing 11 had histological evidence of pregnancy.

TABLE II—Comparison of E.M.U. Pregnancy Test Results with Subsequent Histology of Aspirate from 403 Patients when Menses were Delayed from Two to 16 Days

Pregnancy Test	Histology			Total No. (%) of Patients
	Negative	Suggestive	Positive	
Negative ..	123	10	53	186 (46)
Equivocal ..	2	1	11	14 (4)
Positive ..	3	4	196	203 (50)
Total (%) ..	128 (32)	15 (4)	260 (65)	403 (100)

ASPIRATION

The average time for the whole procedure from insertion to removal of the speculum was three to four minutes and when local anaesthetic was used seven to eight minutes. No cervical dilatation was required in 411 (97%) patients. Dilators varying in size from 2-6½ Hegar were used for 13 patients, most of whom were nulliparous. The 4-mm cannula only was used for 371 (88%) of the 424 cases and only one insertion of the cannula was required in 313 (74%). Larger cannulae

were used in 21 (5%) to achieve the end point or remove products of conception which blocked the narrower tube.

The uterus was completely evacuated in 401 patients (95%). Of the 260 patients with histologically proved pregnancies the initial aspiration was successful in 248. The remaining 12 had a positive pregnancy test result at the follow-up visit and needed further evacuation. Of the 128 patients who were shown not to be histologically pregnant the procedure was successful in 126. Two patients had a positive pregnancy test result at follow-up and required further evacuation.

There was a difference between the mean volume aspirated from the pregnant and non-pregnant patients which was statistically significant ($P < 0.001$). The mean volume of aspirate was 3.81 ± 3.05 ml in non-pregnant women (range 0.5-16 ml). The volume varied greatly in pregnant women, the mean volume rising the longer menses were delayed (mean 16.34 ± 10.14 ml; range 2-60 ml). An aspirate greater than 60 ml suggested that the pregnancy was more advanced than indicated by dates. The mean aspiration time for pregnant women was 2 minutes (range 45 seconds-6 minutes), and for non-pregnant women 2 minutes 20 seconds (range 45 seconds-5 minutes).

PAIN

Intracervical block significantly reduced the pain of the procedure (table III; $P < 0.001$). More pain was experienced if the patient was not pregnant than if she was pregnant regardless of whether an intracervical block had been used ($P < 0.0002$). Less pain was experienced by women who had been pregnant before though women who had had only a first trimester abortion behaved more like those who had never been pregnant than like parous women. Only 28 (6%) considered the pain unacceptable. At the first follow-up visit 356 (89%) of the women said they would be willing to repeat the experience if necessary.

TABLE III—Distribution of Pain Ratings according to Pregnancy and Use of Anaesthetic. Results are Percentages of Patients

Pain rating:	No Anaesthetic			Local Anaesthetic		
	0-2	-4	4	0-2	-4	4
Pregnant	41	45.5	13.5	65	28	7
Non-pregnant ..	29	61	10	49	49	2

COMPLICATIONS

A rise in temperature not associated with pelvic pain followed the first procedure in 14 (3.4%) patients with an equal distribution among the pregnant and non-pregnant. Pyrexia appeared within the first 10 days in eight out of 14 patients. Retained products of conception necessitating evacuation of the uterus occurred in 2.8% of patients, most of whom had pelvic pain and a rise in temperature. The first aspiration was unsuccessful as judged by continuing pregnancy in 2.6% of patients. Though not strictly a complication a negative laparoscopy was done in three patients with a possible ectopic pregnancy.

Records were available for 381 patients six weeks after the procedure. Minor psychological symptoms were reported by 69 patients and most had felt upset or depressed the week after the procedure. Only seven patients complained of depression a month later. Six patients mentioned loss of libido, three had nightmares, and three feared infertility. Minor physical complications affected 16 patients and included urinary tract infection (two cases) or continuing pelvic pain (five cases). During the procedure 88 patients reported side effects such as nausea and vomiting (44) and feeling faint (20). The use of local anaesthetic was attended by transient side effects such as tinnitus and dizziness in 70 patients receiving intracervical block. Only one patient was kept in hospital overnight as a result of the initial procedure and in this case the uterus was larger than expected by dates.

Discussion

Our study shows that the procedure and complications of very early termination of pregnancy are similar to those of terminations done later in the first trimester.^{5,6} It is clear from the readi-

ness with which women used the service and their subsequent replies that early intervention does prevent much of the emotional disturbance that normally increases with each week of an unwanted pregnancy.

If aspiration is performed on all women regardless of whether the pregnancy test result is positive or negative unnecessary operations are performed (123 (29%) of our patients). Our results suggest that a positive pregnancy test result before 14 days of amenorrhoea is a reliable indication of pregnancy while a negative result is much less reliable. A negative result or a reduced volume of aspirate should be investigated by a repeat test about a week later, followed by a repeat aspiration if the result is positive. Using histological analysis and pregnancy testing together does not altogether exclude the possibility of a continuing pregnancy and where histology is only "suggestive" repeat pregnancy tests are desirable one and two weeks after the procedure. Obviously the ready availability of a rapid and sensitive radioimmunoassay or radioreceptor test⁷ would prevent the delay in those with negative test results and replace the need for histology.

Aspiration at this stage of pregnancy is simple and the use of a very narrow cannula rules out the possibility of damage to the cervix and the risk of incompetence complicating subsequent pregnancies. Nevertheless, the complication rate is such that we feel women should be warned of the small risk that the early conceptus may be missed at the first aspiration (2.6%); that the evacuation may not be complete (2.8%); and how important follow-up is to exclude a continuing pregnancy.

Intracervical block proved valuable in non-parous and non-pregnant women, who are likely to have irritable uteri that go into spasm more readily than those of parous or pregnant women. Our patients showed a similar pain response to those of Lewis *et al.*⁵ Most found the procedure uncomfortable but bearable and at one week follow-up only 5% said that they had so much pain they would never consider having it done again. Lewis *et al.*⁵ commented on the fact that some women who found the procedure painful initially did not remember it as painful when questioned six weeks later.

As in later pregnancies for which Karman cannula aspiration is used the risk of haemorrhage either during or after the operation is negligible. In this study the incidence of complications (table IV) was higher than that reported by some authors but similar to that of Hull *et al.*⁶ and Lewis *et al.*⁵ The reason for this difference may be related to a first follow-up attendance

Several women found the procedure upsetting or painful and only 13 of the 361 patients asked were prepared to consider the method as an alternative to contraception.

CONCLUSIONS

If the woman is definitely pregnant termination done as early as possible seems to have some advantages over the same procedure performed later in pregnancy. Technically it is simple to perform though, as in more advanced pregnancy, some experience is needed if complications are to be avoided. Nevertheless, the generally adverse replies of our patients and the small but definite incidence of complications underline the conclusion that early termination is not an acceptable alternative to contraception.

The organization of early termination, or of any termination service, could be simplified considerably by the use of non-medical personnel such as nurses or trained lay counsellors who would do much of the work which is now part of a doctor's responsibility. One of the most important contributions that individuals working in such a service make to women requesting termination results from sympathetic questioning and listening. All that is needed for clinical purposes can be obtained from a few predetermined questions which a good counsellor can ask during the course of her interview. Having gained the confidence of the patient the counsellor is better placed than the doctor to provide support throughout the procedure, give contraceptive advice, and generally help in overcoming emotional problems. If the doctor had seen only those women with a positive pregnancy test result (50% in this study) or an abnormal clinical history the medical load would have been greatly reduced. Such innovations need to be considered seriously if a legal abortion service is to become generally available in the community.

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TABLE IV—Comparison of Incidence of Complications after Early Termination in Several Studies

Reference	No. of Patients	Gestation (Weeks)	Incidence of Complications (%)	
			Retained Products	Possible Sepsis
Lewis <i>et al.</i> ⁵	127	6-10	3.9	2.4
Hull <i>et al.</i> ⁶	433	6-14	5.9	5.1
Vengadasalem <i>et al.</i> ³	496	4-6	0.0	0.2
Wikajastro ¹	189	4-6	0.5	4.8
This study	424	4-6	5.4	3.4

at two to four weeks in the Philippines¹ and two to eight weeks in Singapore³ and also to the variation in the definition of conditions which are notoriously difficult to diagnose, such as low grade pelvic sepsis. Overnight stay in hospital after the procedure would not lead to an earlier diagnosis of pelvic inflammatory disease.

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